

## GENERAL NOTES

- Specifications:** Latest SHA Specifications and Special Provisions for materials and construction. Latest AASHTO LRFD Bridge Design Specifications.
- Materials:** Posts and rails shall conform to ASTM F-1083, Schedule 80. Fabric shall be 6 gauge, 2" PVC coated mesh conforming to 914.01.
- All posts, braces, fittings and hardware shall be PVC coated. Coating shall conform to 914.03 except that nuts, bolts and washers shall also be PVC coated and touched up after installation.
- All plates shall be steel conforming to ASTM A 709 Grade 36.
- Anchor studs or anchor bolts shall conform to ASTM A 276, Type 430 or Type 304 stainless steel annealed, hot-finished, ultimate strength 70 000 psi min., 20% min. elongation. Threads may be rolled or cut.
- Epoxy grout for anchor studs in cored holes shall conform to 902.11 (d).
- PVC color for all elements of fence shall be black unless otherwise noted.
- Construction:** All longitudinal rails shall be parallel to top of parapet.
- All posts shall be set normal to top of parapet for roadway grades 6% or less. For grades over 6% posts shall be set plumb.
- The chain link fence shall be true to line, taut, tight fit to top of parapet, with  $\frac{1}{2}$ " min. to 1" max. gap, and shall comply with the best practice for fence construction of this type.
- Post and rails shall be permanently positioned before fabric is placed.
- For post spacing see pertinent structure sheets.
- Precoated longitudinal rails, if cut, shall have the cut end coated with PVC touch up material supplied by the manufacturer prior to erection.
- If Contractor elects to place anchor studs after placing concrete parapet, newly placed rebars shall be located so that coring does not damage same, all holes shall be cored (not drilled) and the diameter of the cored holes for the anchor studs shall be  $\frac{7}{8}$ ".
- Measurement and Payment:** The furnishing, fabricating, erecting, etc., of all new chain link fence on the bridges, complete in place, will not be measured for payment but all costs thereof shall be included in the Contract lump sum prices for the pertinent Chain Link Safety Fence For Bridge items.
- The furnishing, fabricating, erecting, etc., of all new chain link fence anti-climb shields, complete in place, will be measured and paid for at the Contract unit prices per each for the pertinent Chain Link Safety Fence Anti-Climb Shield items.
- Any defects uncovered by the inspection of welds on base plates and poles shall be repaired or replaced by new members at no additional cost to the Administration.

APPROVAL		
<i>L.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES		
DATE: 6/3/76		
REVISIONS		
SHA	FHWA	
11-17-97	.	
3-13-01	.	
7-24-01	.	
FHWA APPROVAL	DATE: 11-9-76	
	10-9-07	.

STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF STRUCTURES

CHAIN LINK SAFETY FENCE-NEW STRUCTURES  
GENERAL NOTES

STANDARD NO. BR-SS(3.01)-75-21(L)

SHEET 1 OF 1



## GENERAL NOTES

- Specifications:** Latest SHA Specifications and Special Provisions for materials and construction. Latest AASHTO Standard Specifications for Highway Bridges for design.
- Materials:** Posts and rails shall conform to ASTM F-1083, Schedule 80. Fabric shall be 6 gauge, 2" PVC coated mesh conforming to 914.01.
- All posts, braces, fittings and hardware shall be PVC coated. Coating shall conform to 914.03 except that nuts, bolts and washers shall also be PVC coated and touched up after installation.
- All plates shall be steel conforming to ASTM A 709 Grade 36.
- Anchor studs or anchor bolts shall conform to ASTM A 276, Type 430 or Type 304 stainless steel annealed, hot-finished, ultimate strength 70 000 psimin., 20% min. elongation. Threads may be rolled or cut.
- Epoxy grout for anchor studs in cored holes shall conform to 902.11 (d).
- PVC color for all elements of fence shall be black unless otherwise noted.
- Construction:** All longitudinal rails shall be parallel to top of parapet.
- All posts shall be set normal to top of parapet for roadway grades 6% or less. For grades over 6% posts shall be set plumb.
- The chain link fence shall be true to line, taut, tight fit to top of parapet, with 1/2" min. to 1" max. gap, and shall comply with the best practice for fence construction of this type.
- Post and rails shall be permanently positioned before fabric is placed.
- For post spacing see pertinent structure sheets.
- Precoated longitudinal rails, if cut, shall have the cut end coated with PVC touch up material supplied by the manufacturer prior to erection.
- If Contractor elects to place anchor studs after placing concrete parapet, newly placed rebars shall be located so that coring does not damage same, all holes shall be cored (not drilled) and the diameter of the cored holes for the anchor studs shall be 7/8".
- Measurement and Payment:** The furnishing, fabricating, erecting, etc., of all new chain link fence on the bridges, complete in place, will not be measured for payment but all costs thereof shall be included in the Contract lump sum prices for the pertinent Chain Link Safety Fence For Bridge items.
- The furnishing, fabricating, erecting, etc., of all new chain link fence anti-climb shields, complete in place, will be measured and paid for at the Contract unit prices per each for the pertinent Chain Link Safety Fence Anti-Climb Shield items.
- Any defects uncovered by the inspection of welds on base plates and poles shall be repaired or replaced by new members at no additional cost to the Administration.

APPROVAL	
<i>[Signature]</i> DIRECTOR	
OFFICE OF STRUCTURES	
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4-27-94	.
11-17-97	.
3-13-01	.
7-24-01	.

STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF STRUCTURES

**CHAIN LINK SAFETY FENCE-NEW STRUCTURES  
GENERAL NOTES**

STANDARD NO. BR-SS(3.01)-75-21

SHEET 1 OF 1

1.660" O.D. pipe, weighing 3.00 #/ft.  
(Typical all longitudinal rails).

Weld additional straight post (shown dashed) onto curved post at last full height post on bridge typical both ends, both sides.

2.875" O.D. pipe, weighing 7.66 #/ft.  
(Typical all posts).

2"-#6 gauge chain link fence screen (7'-0").

1/2" base plate-see DETAIL A

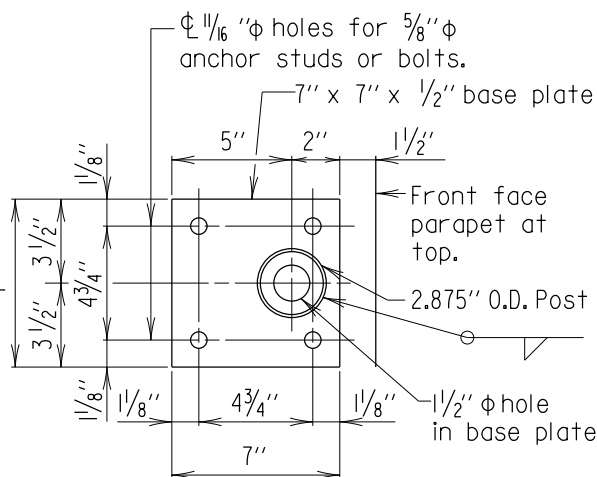
3/4" min. from top of base plate to top of anchor stud

Use double hex. nuts with washers to align 1/2" base plate

Varies

Note:  
Straight back parapet shown,  
see Typical Section for exact configuration.

4- 5/8"  $\phi$  anchor studs with hex. nuts and washers (top) and hex. nuts and washers bottom of base plate and bottom of anchor studs or 4- 5/8"  $\phi$  hex. head anchor bolts (head embedded in concrete) with double hex. nuts and washers (top) \*



DETAIL A

Scale: 1 1/2" = 1'-0"

Note:  
Type I Fence shall only be used adjacent to sidewalks 3'-0" or greater.

TYPICAL SECTION

Scale: 3/4" = 1'-0"

\* As an option, the Contractor may set the anchor studs after placing concrete barrier using 7/8" dia. cored holes and an approved epoxy grout. Nuts and washers shall be omitted from the embedded ends of anchor studs. No additional compensation will be allowed for this option.

APPROVAL	
<i>E.S. Friedman</i>	DIRECTOR
OFFICE OF STRUCTURES	
DATE: 6/8/76	
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SHA	FHWA
11-17-97	.
3-20-01	.
10-22-03	.
9-24-13	.

FHWA APPROVAL  
DATE: 11-9-76

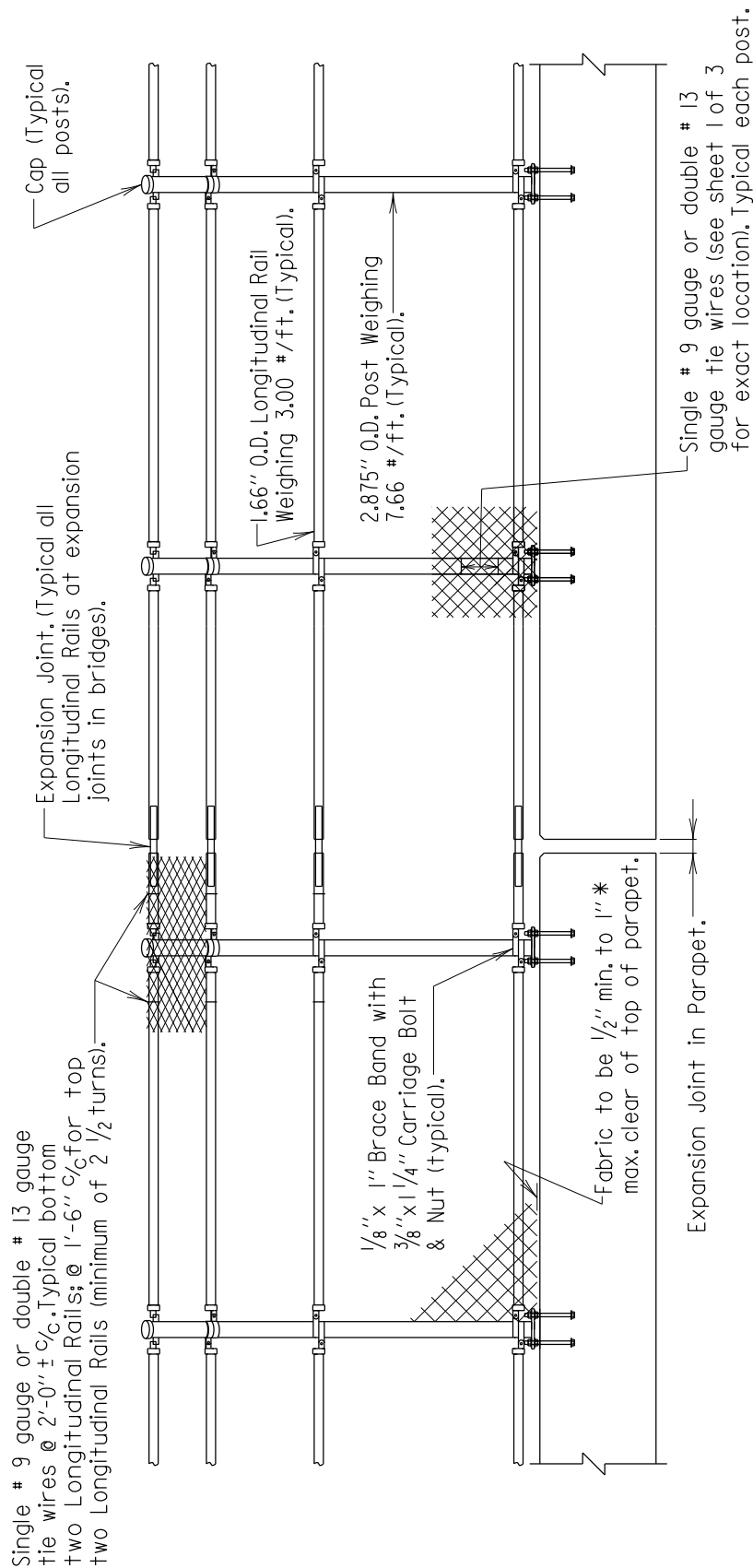
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TYPE I CHAIN LINK SAFETY FENCE  
NEW STRUCTURES

STANDARD NO. BR-SS(3.02)-75-22

SHEET 1 OF 3

SUPERFENCING NEW STRUCT.



ELEVATION  
Scale: 3/8"=1'-0"

\* Before placing fencing, place 1/2" to 1" thick material (wood, etc.) on top of parapet to ensure the desired gap is achieved. After fence is rigidly attached, this temporary blocking shall be removed.

FHWA APPROVAL  
DATE: 11-9-76

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<i>ES Fisher</i>	DIRECTOR
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SHA	FHWA
11-17-97	6-8-90
1-22-01	.
9-24-13	.

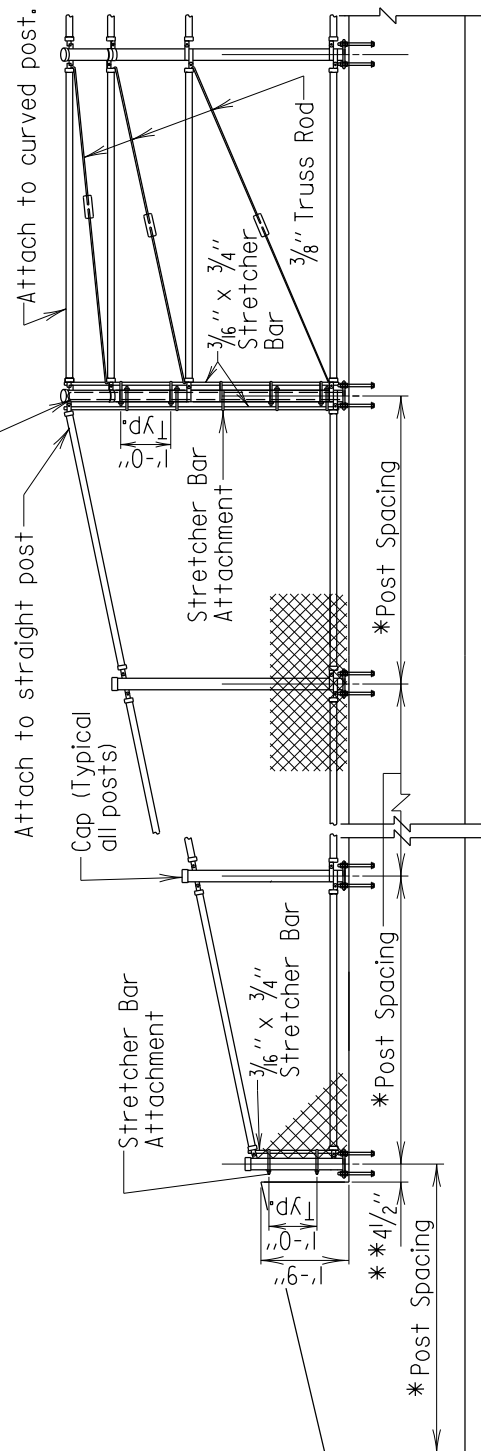
STANDARD NO. BR-SS(3.02)-75-22

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TYPE I CHAIN LINK SAFETY FENCE  
NEW STRUCTURES

SHEET 2 OF 3

SUPER-FENCING NEW STRUCT.

Anti-climb Shield (shown dashed). Place Anti-climb Shield at first full height post. Typical for both ends and both sides of each bridge.



\* See plans for fence post spacing.  
 \*\* Dimension is 1'-0" when first fence post is on the bridge.

END SECTION DETAIL

Scale: 1/4"=1'-0"

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<i>L. S. Fisher</i>	DIRECTOR
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DATE: 6/19/89	
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7-31-98	.
1-22-01	.
9-22-06	.
9-24-13	.

FHWA APPROVAL  
 DATE: 6-8-90

STATE OF MARYLAND  
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TYPE I CHAIN LINK SAFETY FENCE  
 NEW STRUCTURES

STANDARD NO. BR-SS(3.02)-75-22

SHEET 3 OF 3

1.660" O.D. pipe, weighing 3.00 #/ft.  
(Typical all longitudinal rails).

2.875" O.D. pipe, weighing 7.66 #/ft.  
(Typical all posts).

2"-#6 gauge chain link  
fence screen (5'-0").

1/2" base plate-see DETAIL A

3/4" min. from top of base  
plate to top of anchor stud

Note:  
34" F-shape parapet with  
straight back shown, see  
Typical Section for exact  
parapet configuration.

Typ. 3/16"

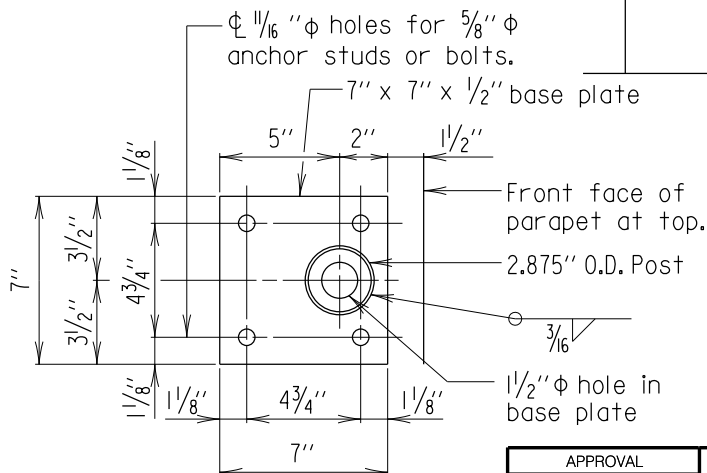
Use double hex. nuts with  
washers to align 1/2" base  
plate

4- 5/8"  $\phi$  anchor studs with hex. nuts  
and washers (top) and hex. nuts and  
washers bottom of base plate and  
bottom of anchor studs or 4- 5/8"  $\phi$  hex.  
head anchor bolts (head embedded in  
concrete) with double hex. nuts and  
washers (top) \*

Varies

4 3/4"

2 5/8"



DETAIL A

Scale: 1/2" = 1'-0"

TYPICAL SECTION

Scale: 3/4" = 1'-0"

\* As an option, the Contractor may set the  
anchor studs after placing concrete barrier  
using 7/8" dia. cored holes and an approved  
epoxy grout. Nuts and washers shall be omitted  
from the embedded ends of anchor studs. No  
additional compensation will be allowed for this  
option.

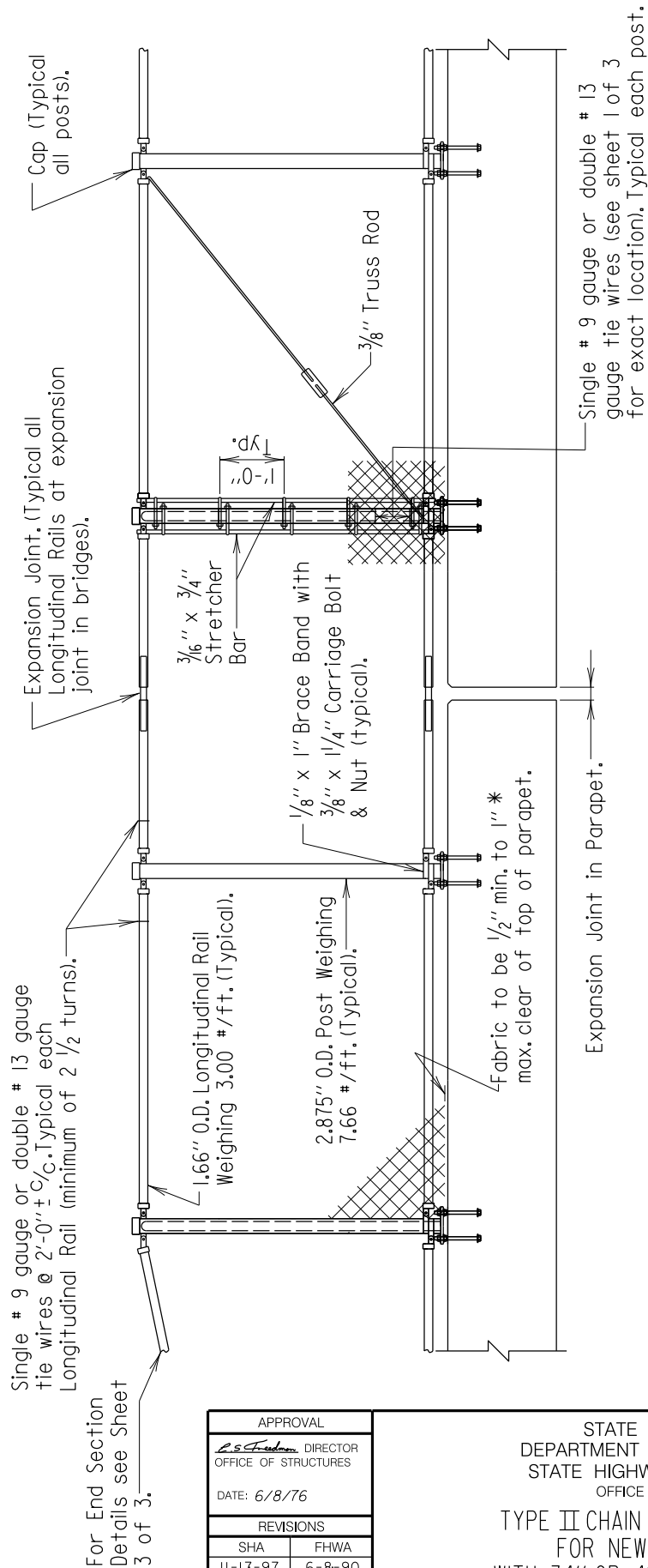
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<i>L.S. Hudson</i> DIRECTOR	OFFICE OF STRUCTURES
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11-17-97	6-8-90
3-21-01	.
6-1-05	.
9-24-13	.

FHWA APPROVAL  
DATE: 11-9-76

STATE OF MARYLAND  
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OFFICE OF STRUCTURES  
TYPE II CHAIN LINK SAFETY FENCE  
FOR NEW STRUCTURES  
WITH 34" OR 42" F-SHAPE PARAPET

STANDARD NO. BR-SS(3.03)-75-23

SHEET 1 OF 3



ELEVATION  
Scale: 3/8"=1'-0"

\* Before placing fencing, place 1/2" to 1" thick material (wood, etc.) on top of parapet to ensure the desired gap is achieved. After fence is rigidly attached, this temporary blocking shall be removed.

For End Section  
Details see Sheet  
3 of 3.

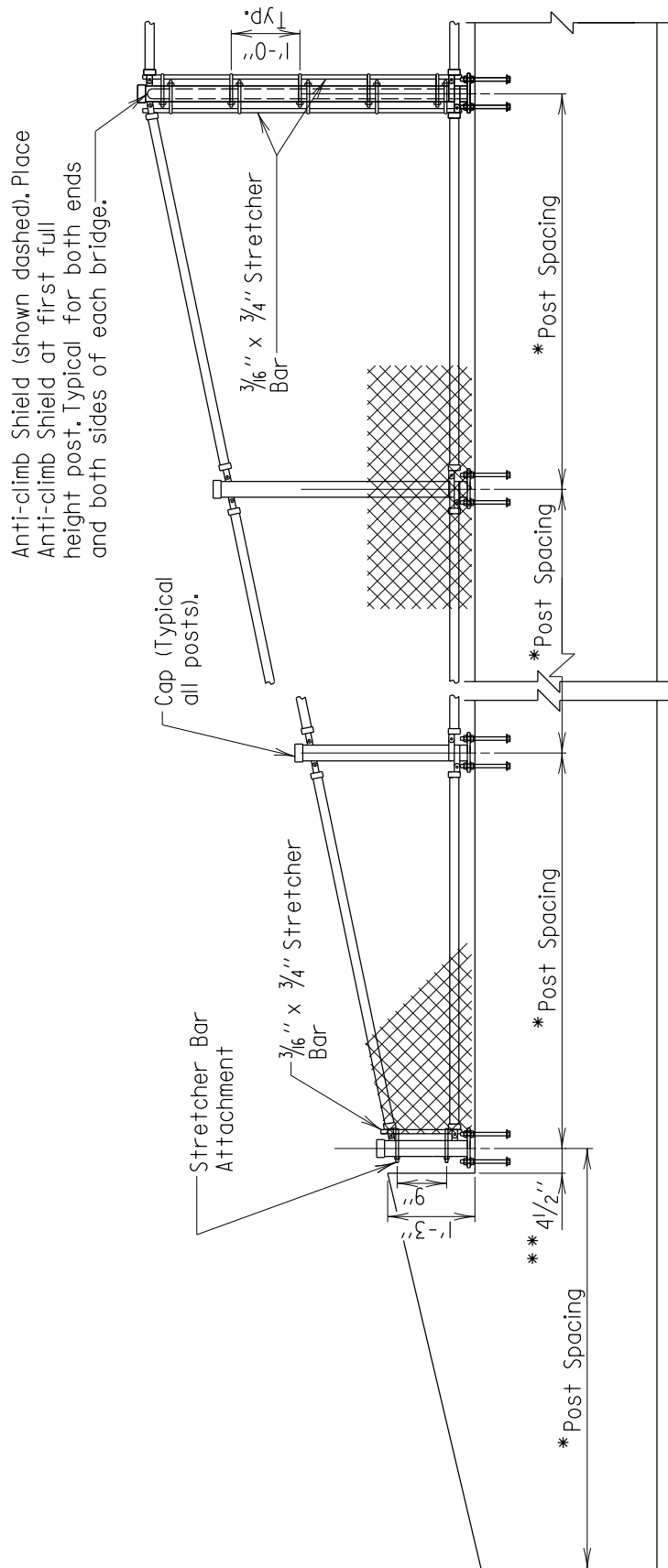
FHWA APPROVAL  
DATE: 11-9-76

APPROVAL	
<i>R. S. Fisher</i>	DIRECTOR
OFFICE OF STRUCTURES	
DATE: 6/8/76	
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11-17-97	6-8-90
3-21-01	.
6-1-05	.
9-24-13	.

STATE OF MARYLAND  
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STATE HIGHWAY ADMINISTRATION  
OFFICE OF STRUCTURES  
TYPE II CHAIN LINK SAFETY FENCE  
FOR NEW STRUCTURES  
WITH 34" OR 42" F-SHAPE PARAPET

STANDARD NO. BR-SS(3.03)-75-23

SHEET 2 OF 3



- \* See plans for fence post spacing.
- \* Dimension is 1'-0" when first fence post is on the bridge.

END SECTION DETAIL

Scale: 3/8"=1'-0"

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<i>[Signature]</i>	DIRECTOR
OFFICE OF STRUCTURES	
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11-17-97	.
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9-24-13	.

FHWA APPROVAL  
DATE: 6-8-90

STATE OF MARYLAND  
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OFFICE OF STRUCTURES  
  
TYPE II CHAIN LINK SAFETY FENCE  
FOR NEW STRUCTURES  
WITH 34" OR 42" F-SHAPE PARAPET

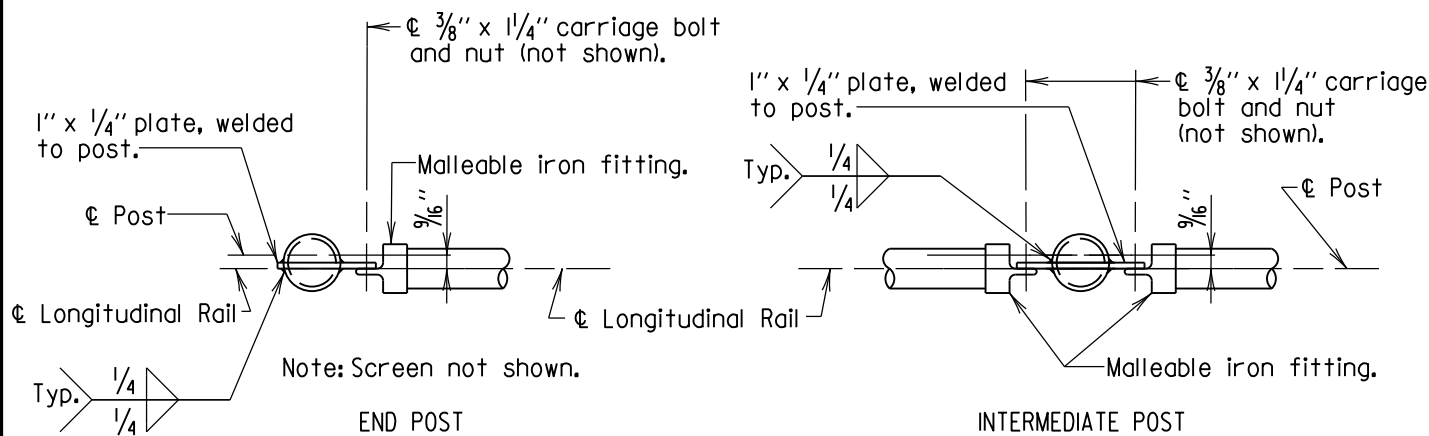
STANDARD NO. BR-SS(3.03)-75-23

SHEET 3 OF 3



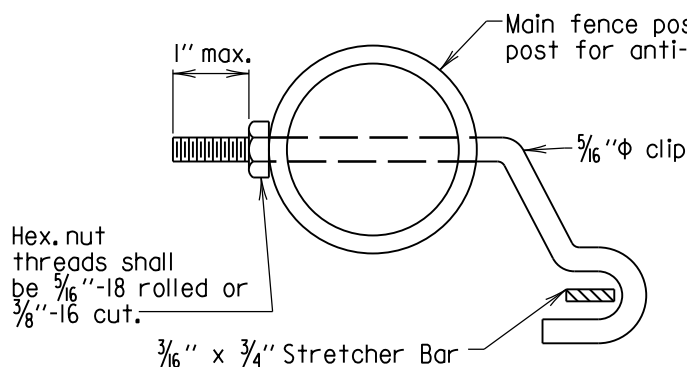
Technical drawing of a sleeve joint. The drawing shows a cross-section of a sleeve (1.050" O.D. Sleeve 1.47 #/ft.) and a rail (1.660" O.D. Rail 3.00 #/ft.). The sleeve is shown with a 3/16" gap. The joint is labeled "Low Side" and "High Side". Dimensions are given for the sleeve length (6" on each side) and the gap (2 1/2").

Scale:  $1\frac{1}{2}'' = 1'-0''$

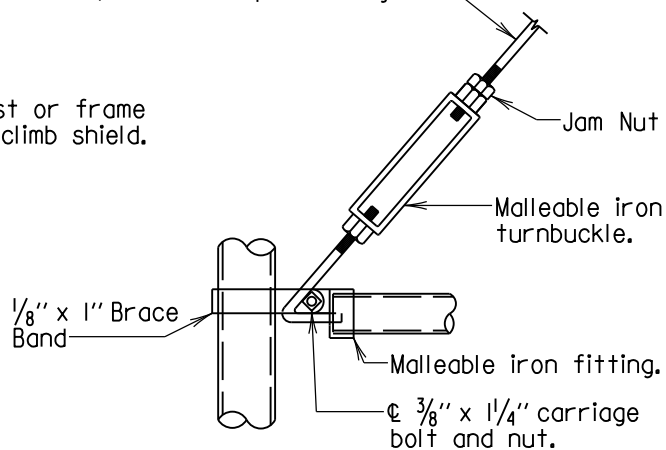


Scale:  $1\frac{1}{2}'' = 1'-0''$

$\frac{3}{8}$ "  $\phi$  Truss rods, end fence panels only.



## Scale: None

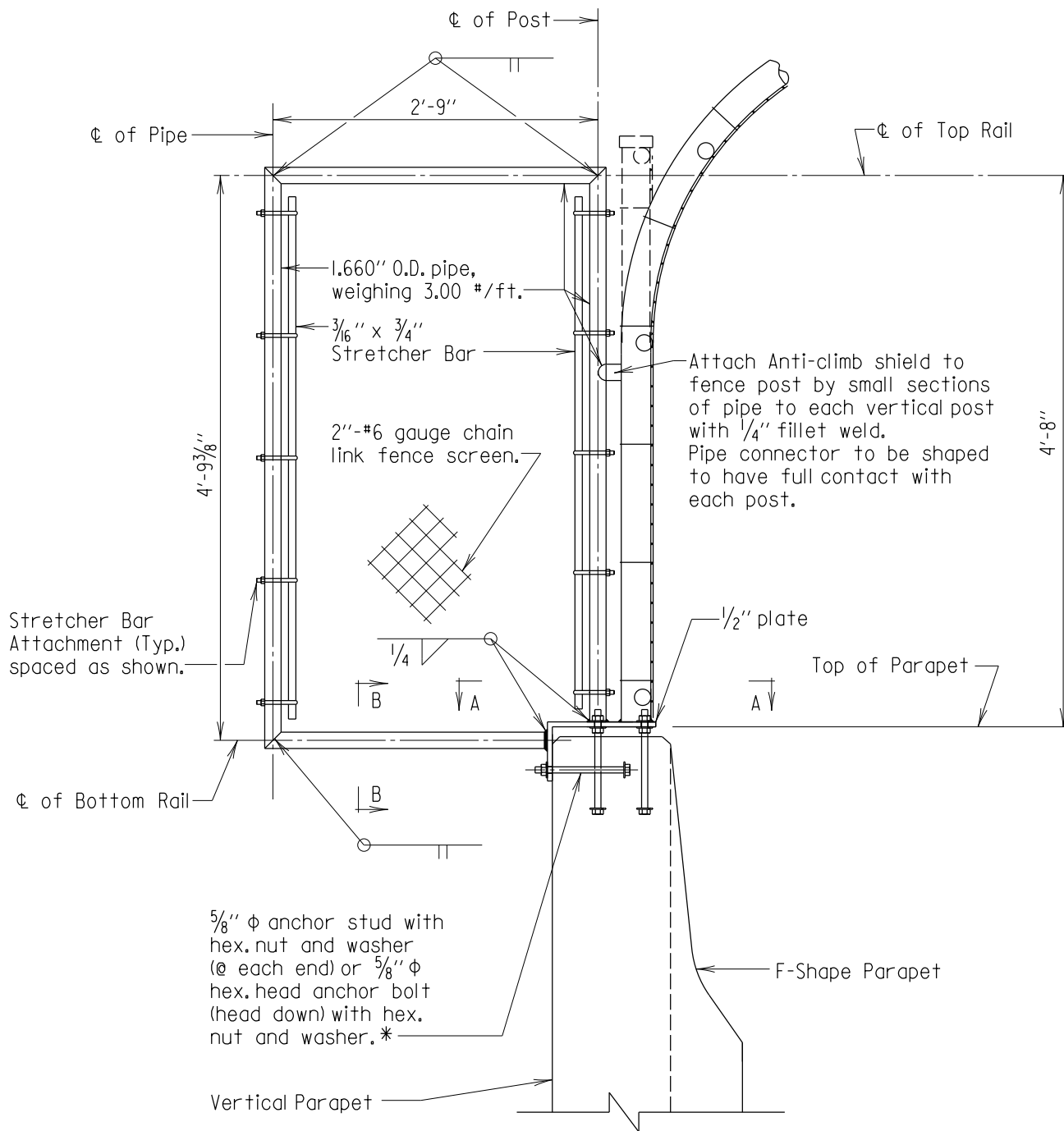


Scale:  $1\frac{1}{2}'' = 1'-0''$

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<i>C.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES	
DATE: 6/3/76	
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SHA	FHWA
8-4-87	6-8-90
1-22-01	.
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CHAIN LINK SAFETY FENCE - NEW STRUCTURES  
MISCELLANEOUS DETAILS

SHEET 1 OF 1



\* As an option, the Contractor may set the anchor studs after placing concrete barrier using 7/8" dia. cored holes and an approved epoxy grout. Nuts and washers shall be omitted from the embedded ends of anchor studs. No additional compensation will be allowed for this option.

### TYPICAL SECTION

Scale: 3/4" = 1'-0"

Note:  
Straight back parapet shown, see Typical Section for exact configuration.

#### Notes:

- For Sections A-A and B-B see Sheet 2 of 2 of this standard.
- For additional anchor bolt details see to std. BR-SS(3.02)-75-22 or BR-SS(3.03)-75-23.

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SHA	FHWA
3-13-01	.
7-26-01	.
9-2-03	.
10-3-80	.
9-24-13	.

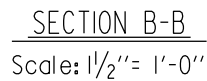
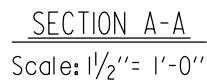
FHWA APPROVAL  
DATE: 10-3-80

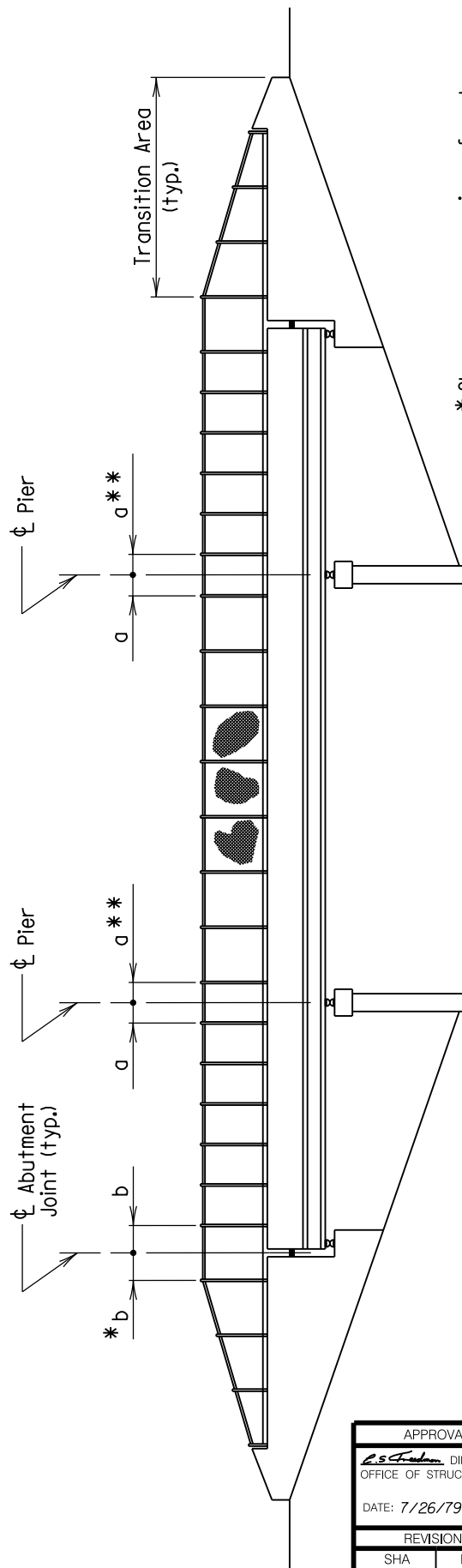
STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
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### ANTI-CLIMB SHIELD FOR CHAIN LINK SAFETY FENCES TYPES I AND II

STANDARD NO. BR-SS(3.05)-75-25

SHEET 1 OF 2





\* 2b = average spacing of end post and adjacent span, with exceptions as noted on Sheet 2.

\* 2a = average spacing of flanking spans.

### ELEVATION - FENCING

Scale: None

### FENCE SPACING ON BRIDGES

- All spacings shall be equal in each span, and on each transition area of each end post.
- Fence post spacing should range from 6'-0" min. to 8'-0" max. except as modified in the transition area described on Sheet 2. Effort should be made to make spacing of posts for all spans nearly equal as possible.
- Transition areas shall be provided on both ends of the bridge comprised of a tapered concrete lug and three fence panels, all equally spaced as shown on Sheet 2 of 2.
- Fence shall be continuous across all supports.
- This layout applies to 34" F-shape parapets, 42" F-shape parapets, and parapets with sidewalks.

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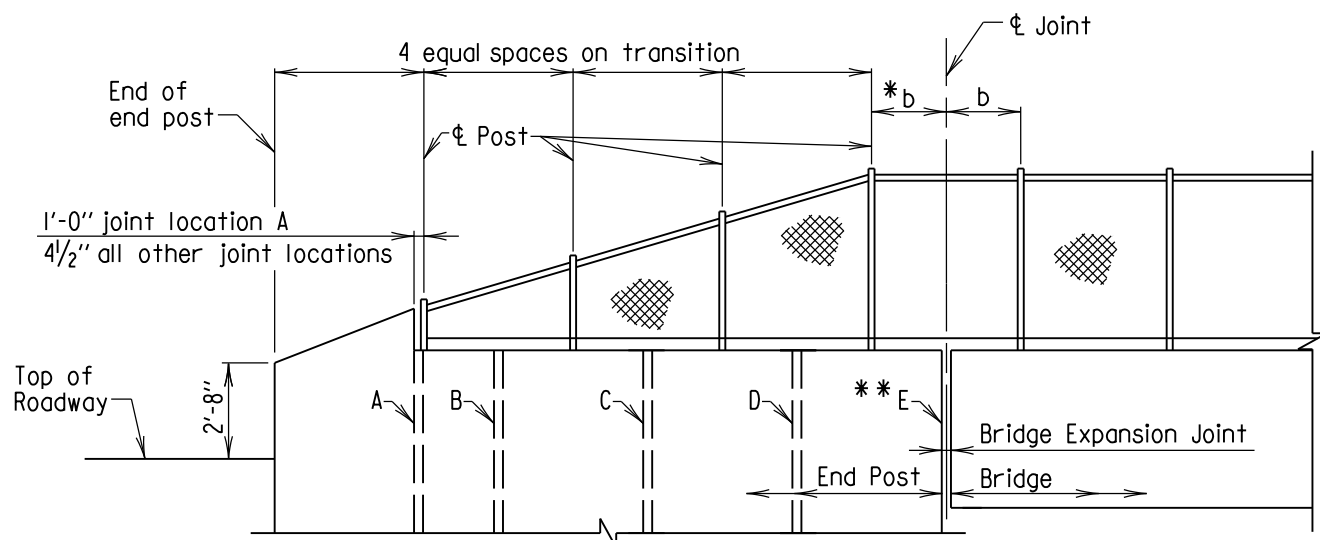
APPROVAL	
<i>[Signature]</i>	DIRECTOR OFFICE OF STRUCTURES
DATE: 7/26/79	
REVISIONS	
SHA	FHWA
3-7-83	.
3-15-83	.
6-1-05	.
FHWA APPROVAL DATE: 12-19-79	.

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### LAYOUT OF FENCING ON BRIDGES

STANDARD NO. BR-SS(3.06)-03-78

SHEET 1 OF 2



\* 2b = average spacing of end post and adjacent span, with exceptions stated in Note 4.

### ELEVATION - END POST TRANSITION AREA

Scale: None

#### Notes:

1. Transition areas should be provided on both ends of the bridge, comprised of a tapered concrete lug and ~~three~~ tapered fence panels, all equally spaced.
2. The end of the concrete lug on both the approach and trail end shall be 2'-8".
3. The End Post Transition Area shall always begin at the end of the end post and be laid out in accordance with the following chart.
4. When roadway joint falls in the middle of a tapered panel (Joint Locations B, C, and D) the first full height panel on the bridge shall be the average spacing of the panels in the transition area and the adjacent span.


#### END POST TRANSITION AREA

Roadway Joint Location	End Post Length	Fence Transition Panels on End Post	Fence Transition Panels on Bridge
A	$L \leq 8'-0''$	0	3
B	$8'-0'' < L \leq 12'-0''$	$\frac{1}{2}$	$2\frac{1}{2}$
C	$12'-0'' < L \leq 20'-0''$	$1\frac{1}{2}$	$1\frac{1}{2}$
D	$20'-0'' < L \leq 28'-0''$	$2\frac{1}{2}$	$\frac{1}{2}$
**E	$28'-0'' < L$	$3 + (n + \frac{1}{2})$ full height panels	0

\*\* Location of Bridge Expansion Joint E varies depending on the number of full height panels on the endpost.

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n = the number of full height panels on the end post

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#### LAYOUT OF FENCING ON BRIDGES

STANDARD NO. BR-SS(3.06)-03-78

SHEET 2 OF 2

## GENERAL NOTES

- Specifications:** Latest SHA Specifications and Special Provisions for materials and construction. Latest AASHTO Standard Specifications for Highway Bridges for design.
- Materials:** Posts and rails shall conform to ASTM F-1083, Schedule 80. Fabric shall be 6 gauge, 2" PVC coated mesh conforming to 914.01.
- All posts, braces, fittings and hardware shall be PVC coated. Coating shall conform to 914.03 except that nuts, bolts and washers shall also be PVC coated and touched up after installation.
- All plates shall be steel conforming to ASTM A 709 Grade 36.
- Anchor studs or anchor bolts shall conform to ASTM A 276, Type 430 or Type 304 stainless steel annealed, hot-finished, ultimate strength 70 000 psimin., 20% min. elongation. Threads may be rolled or cut.
- Epoxy grout for anchor studs in cored holes shall conform to 902.11 (d).
- PVC color for all elements of fence shall be black unless otherwise noted.
- Construction:** All longitudinal rails shall be parallel to top of wall.
- All posts shall be set normal to top of wall for roadway grades 6% or less. For grades over 6% posts shall be set plumb.
- The chain link fence shall be true to line, taut, tight fit to top of wall ( $\frac{1}{2}$ " maximum gap) and shall comply with the best practice for fence construction of this type.
- Post and rails shall be permanently positioned before fabric is placed.
- For post spacing see pertinent structure sheets.
- Precoated longitudinal rails, if cut, shall have the cut end coated with PVC touch up material supplied by the manufacturer prior to erection.
- If Contractor elects to place anchor studs after placing concrete wall, newly placed rebars shall be located so that coring does not damage same, all holes shall be cored (not drilled) and the diameter of the cored holes for the anchor studs shall be  $\frac{7}{8}$ ".
- Measurement and Payment:** The furnishing, fabricating, erecting, etc., of all new chain link fence on the retaining wall or culvert headwalls and wing walls, complete in place, will not be measured for payment but all costs thereof shall be included in the Contract lump sum prices for the pertinent Retaining Wall or Box Culvert item(s).
- Any defects uncovered by the inspection of welds on base plates and poles shall be repaired or replaced by new members at no additional cost to the Administration.

APPROVAL	
 DIRECTOR OFFICE OF STRUCTURES	
DATE: 11/6/96	
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3-13-01	.
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STATE OF MARYLAND  
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STATE HIGHWAY ADMINISTRATION  
OFFICE OF STRUCTURES  
**CHAIN LINK SAFETY FENCE  
RETAINING WALLS AND BOX CULVERTS  
GENERAL NOTES**

STANDARD NO. BR-SS(3.11)-96-317

SHEET 1 OF 1

SUPER-FENCING NEW STRUCT

1.660" O.D. pipe, weighing 3.00 #/ft.  
(Typical all longitudinal rails).

2.875" O.D. pipe, weighing 7.66 #/ft.  
(Typical all posts).

2"-#6 gauge chain link  
fence screen (3'-0").

1/2" base plate-see DETAIL A

3/4" min. from top of base  
plate to top of anchor stud

Typ. 5/16"

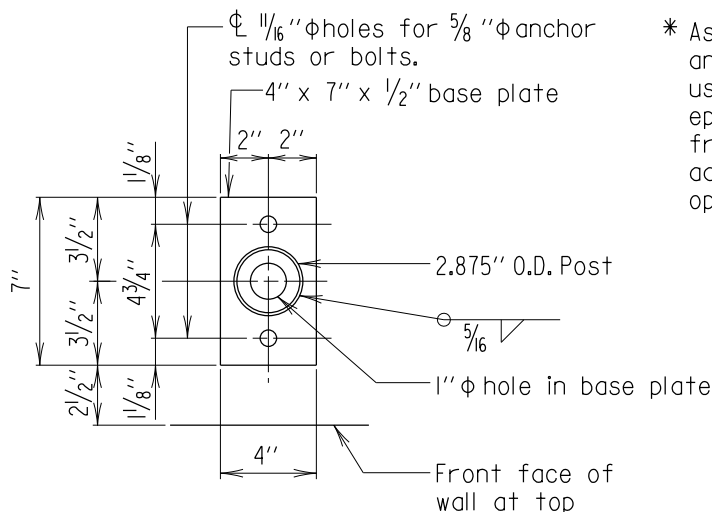
Use double hex. nuts with  
washers to align 1/2" base  
plate

2- 5/8"  $\phi$  anchor studs with hex.  
nuts and washers (top) and hex.  
nuts and washers bottom of base  
plate and bottom of anchor  
studs or 2- 5/8"  $\phi$  hex. head  
anchor bolts (head embedded  
in concrete) with double hex.  
nuts and washers (top) \*

Top of  
finished  
ground

### TYPICAL SECTION

Scale: 3/4" = 1'-0"



\* As an option, the Contractor may set the  
anchor studs after placing concrete wall  
using 7/8" dia. cored holes and an approved  
epoxy grout. Nuts and washers shall be omitted  
from the embedded ends of anchor studs. No  
additional compensation will be allowed for this  
option.

Note:  
This fence shall be used on  
box culverts with headwalls  
located at the bottom of fill  
slopes.

APPROVAL	
<i>E. S. Fisher</i>	DIRECTOR
	OFFICE OF STRUCTURES
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9-24-13	
1-14-14	

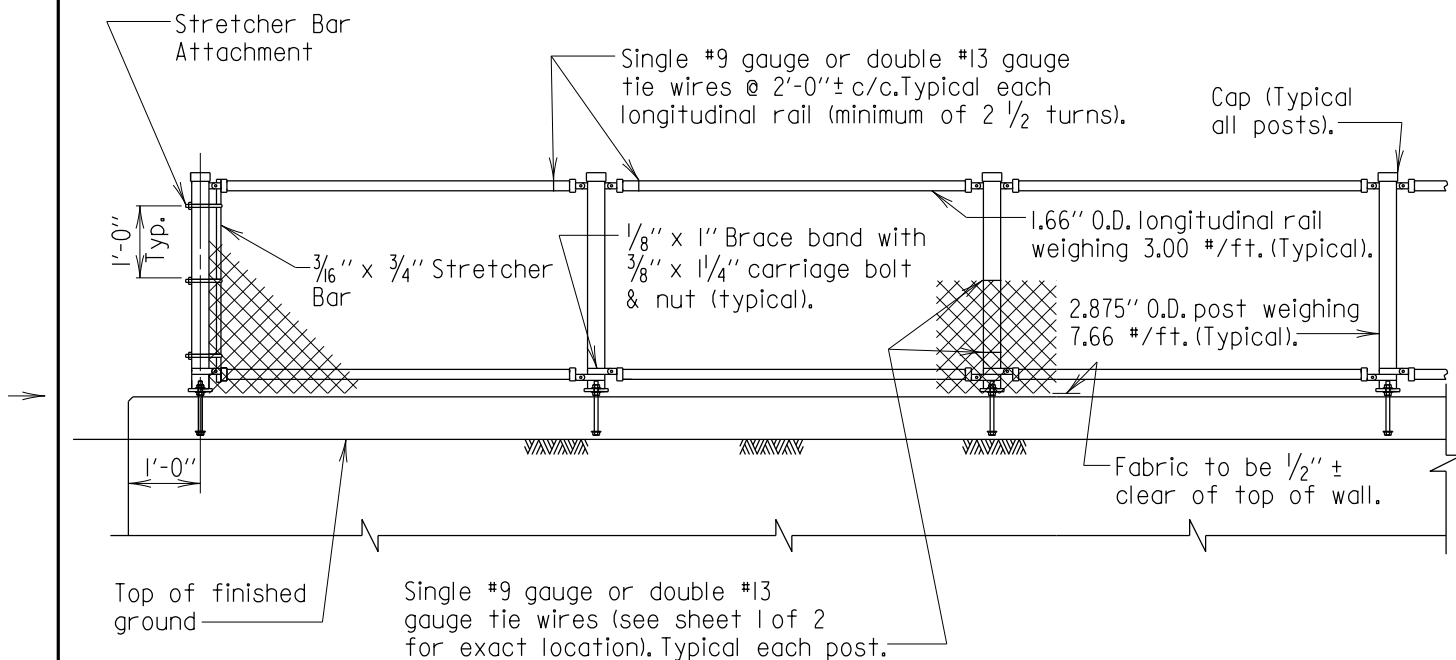
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DATE:

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TYPE III CHAIN LINK SAFETY FENCE  
RETAINING WALLS AND BOX CULVERTS

STANDARD NO. BR-SS(3.12)-96-318

SHEET 1 OF 2



# ELEVATION

Scale:  $\frac{3}{8}'' = 1'-0''$

Note:  
For additional details see Std. No.  
BR-SS(3.04)-75-24.

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<i>L. S. Friedman</i>	DIRECTOR
OFFICE OF STRUCTURES	
DATE: 11/6/96	
REVISIONS	
SHA	FHWA
3-31-10	.
9-24-13	.
1-14-14	.

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DATE: .

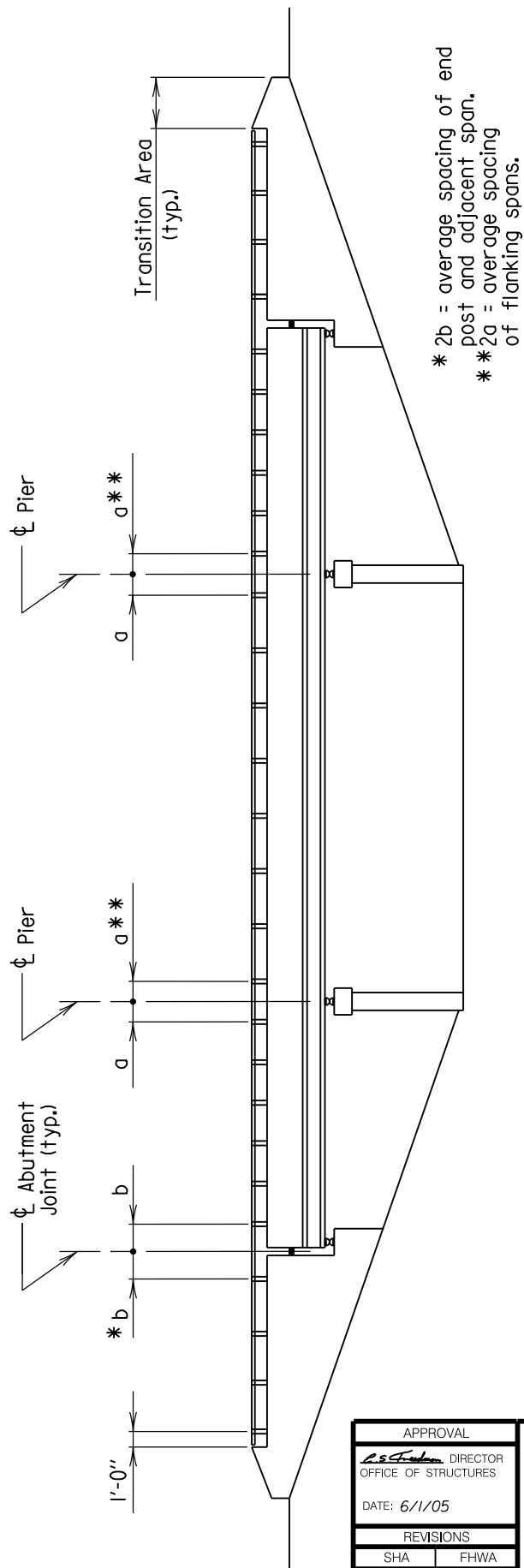
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## TYPE III CHAIN LINK SAFETY FENCE RETAINING WALLS AND BOX CULVERTS

STANDARD NO. BR-SS(3.12)-96-318

SHEET 2 OF 2





### ELEVATION - RAILING

Scale: None

### POST SPACING ON BRIDGES WITH ONE OR TWO STRAND RAILING

- All spacings shall be equal in each span, and on each end post.
- Rail post spacing should range from 6'-0" min. to 8'-0" max. unless a closer post spacing is required due to crash test and as modified in the transition area described on Sheet 2. Effort should be made to make spacing of posts for all spans as nearly equal as possible.
- Transition areas shall be provided on both ends of the bridge comprised of a tapered concrete lug as shown on Sheet 2 of 2.
- Rail shall be continuous across all supports.

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<i>[Signature]</i>	DIRECTOR
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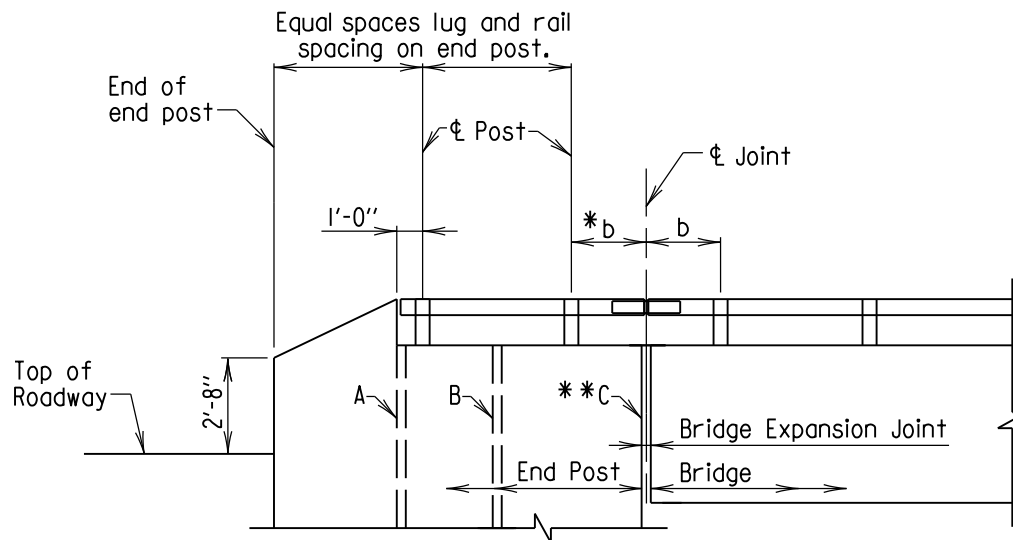
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### LAYOUT OF RAILING ON BRIDGES

STANDARD NO. BR-SS(3.13)-05-374

SHEET 1 OF 2



\* 2b = average spacing of end post and adjacent span.

### ELEVATION - END POST TRANSITION AREA

Scale: None

#### Notes:

1. Transition areas should be provided on both ends of the bridge, comprised of a tapered concrete lug.
2. Transition areas will always begin at the end of the end posts and be laid out in accordance with the following chart.
3. All rail spaces shall be equal in each span.

#### END POST TRANSITION AREA

Roadway Joint Location	End Post Length	Rail Panels on End Post
A	$L \leq 8'-0''$	0
B	$8'-0'' < L \leq 12'-0''$	$\frac{1}{2}$
* * C	$20'-0'' < L$	$(n + \frac{1}{2})$ full rail panel

\* \* Location of Bridge Expansion Joint C varies depending on the number of full height rail panels on the endpost.

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n = the number of full rail panels on the end post

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#### LAYOUT OF RAILING ON BRIDGES

STANDARD NO. BR-SS(3.13)-05-374

SHEET 2 OF 2